

Optimal Regularity and the Free Boundary in The Parabolic Signorini Problem

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In this talk we present a comprehensive treatment of the parabolic Signorini problem based on a generalization of Almgren's - and Poon's - monotonicity formula for the frequency. Our main result include the proof of the optimal regularity of solutions, the classification of free boundary points, the regularity of the regular set, and the structure of the singular set. This is joint work with N. Garofalo, A. Petrosyan, and T. To.